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EDITORIAL

THE HISTORY OF CANCER

The concept of cancerous or malignant growths is undoubtedly very old. In Exodus IX, 8–11, we already find, in the account of the sixth Egyptian plague, an adumbration of soot or chimney-sweep's cancer:

8. And the Lord said unto Moses and unto Aaron, take to you handfuls of ashes of the furnace, and let Moses sprinkle it toward the heaven in the sight of Pharaoh.
9. And it shall become small dust in the land of Egypt, and shall be a boil breaking forth with blains upon man and upon beast, throughout all the land of Egypt.
10. And they took ashes of the furnace, and stood before Pharaoh; and Moses sprinkled it up toward heaven; and it became a boil breaking forth with blains upon man and upon beast.
11. And the magicians could not stand before Moses because of the boils; for the boil was upon the magicians and upon all the Egyptians.

The eminent Orientalist, Paul Haupt, regards these blains or ulcers as of the tropical or endemic variety, but inasmuch as endemic ulcers are now viewed as parasitic infestations (cutaneous Leishmaniasis), the simpler interpretation, viz., that the Hebrews may after all have noticed soot-cancer in furnace-tenders, has some weight. The Hebrew and Syriac expression for cancer is *sartân,* which is identical with the Arabic *saratân* (a crab). Cancer is also designated in mediæval Arabic as *ákilah*

(rodent). In II Timothy, 2, 17, we read: "And their word will eat as doth a canker" (*gangraena*).

Malignant tumors are mentioned in the Ebers Papyrus. The ulcerating forms were treated with an arsenical paste, used as "Egyptian ointment" up to the 17th century. In a cuneiform inscription from Nineveh (800 B. C.), cancer of the breast is termed *machsu* (Oefele). The Ramayana of ancient India refers to the treatment of malignant tumors with the knife and the arsenic paste. The cautery was later employed.

Hippocrates was the first to employ the terms "cancer" and "carcinoma" as designating benign and malignant growths respectively. He also differentiated between "scirrhus" and "carcinoma" as hard and ulcerating types of cancer. (Aph. VIII, 138.) The Hippocratic canon contains references to cancer of the breast and stomach (*melaena*), scirrhus of the cervix uteri and extirpation of a cancer in the neck by the cautery. Celsus diagnosed cancer by its recurrence after cauterization, which engendered the later witticism of Duparque: "Cancer is incurable because it cannot be cured; if curable, it is not cancer." Celsus further differentiated cancer from lipoma, atheroma, steatoma, stressed the involvement of the axilliary glands in mammary carcinoma, and described an operation for cancer of the lip. Galen described cancer of the breast as resembling a crab, was aware of metastases, and therefore recommended total removal of all ramifications when knife and cautery were used. He described sarcoma as a growth having the appearance of raw meat (*sarkos*). He was the first of the long line of theorists as to the causation of cancer, which he ascribed to excess of black bile. The hypothesis held the field until the 17th century, when it was displaced in succession by such theories as those of sour lymph (Descartes), inflammation (Boerhaave), acidosis *vs.* alkalosis (Sylvius), stasis of blood and lymph (Hoffmann), lymph stasis (Monro), coagulated lymph (John Hunter) and so on up to the time of Bichat, Laënnec and Cruveilhier. Meanwhile there was much sound sense in the elder surgeons. Albucasis enlarged upon the impossibility of curing an old, established cancer by the knife or otherwise. Saliceto called such a tumor *noli me tangere,* because "the more you interfere with it the worse it becomes." Lanfranc proclaimed, with true surgical

insight, that "it can only be cured by entire removal, *along with its roots,*" the rationale of the block-dissections of Halsted and Wertheim. Guy de Chauliac saw ulcerating cancer as sometimes due to irritation of chronic ulcers, and used caustics or arsenious acid to test the cancerous nature of suspicious growths *viâ* recurrence. Fabry of Hilden cleaned out the axilla in mammary cancer with knife and ligatures. Paré described the breaking down or ulceration of cancerous tissue, stressed the frequency of the disease in women, and, as one of the first to write on medicine in the vernacular, introduced the term "*chancre,*" which, in the case of the venereal ulcer, conveys a picture of ulcerating cancer *en miniature.*

The advent of Bichat marks the beginning of the long welter of theorizing and controversy as to the histological origins of cancerous tumors, which was to cover the whole of the 19th century.[1] Bichat saw his 21 different tissues as "cellular," in the vague sense in which the 17th century microscopists, Hooke, Malpighi and Grew, had seen the walled-off spaces or "cells" in cork and green plants. He first described the lobular nature of cancer, ascribed it to proliferation of connective tissue (*tissu cellulaire*), and differentiated between its parenchyma or nutritive base and its stroma or degenerated element (1801). In contrast with these far-reaching intuitions stands his vivid account of scirrhus: "*Il crie sous le scalpel.*" Laënnec (1804) and later Lobstein (1829) differentiated homoöplastic and heteroplastic tumors. Laënnec first described schirrus as being, not a pre-cancerous condition, but a distinct and definite connective tissue growth. At this time, cancer of the breast was closely studied by Lobstein, Cruveilhier, Velpeau, Astley Cooper and others. Meanwhile, the cell-theory had been established by Schleiden (1838) and Schwann (1839) and had been already applied to tumors by Johannes Müller (1838), who, with the insight of true genius, attributed cancer to new specific cell formation within the connective tissue of an organ, with pro-

[1] For a full account of these theories and controversies, see Jacob Wolff's exhaustive and accurate monograph "Die Lehre von der Krebskrankheit" (Jena, 1907). If the actual history of medicine were written out in this detailed and documented manner, it would occupy (shall we say) a hundred stout volumes.

found affection or infection of the whole system. He was the first to demonstrate nuclear epithelium in cancerous tissues. A lively hunt for specific cancer cells ensued, and the introduction of the term "cancroid" by Hughes Bennett (1847), for growths devoid of such cells, added to the confusion. In the same year (1847), von Bruns stressed the rôle of the lymphatics in spreading cancer by metastases. Epithelioma was described and named by Hanover (1852) and cylinder-epithelial cancer by Bidder (1852). Meanwhile, Remak had established the growth of new tissues by the division of pre-existing cells (1841–52), and this was applied to pathological formations by Virchow, who described first cancroid (1853), and later cancer and heteroplastic tumors (1885) as proliferations of connective tissue cells, due primarily, both in cancer and its metastases, to some irritating element or secretion. Virchow's theory of cancer was modified by Thiersch (1865) and Waldeyer (1872), who established the primacy of epithelial proliferation in both epithelioma and carcinoma. The dynamic phase of Virchow's doctrine (chronic irritation) has remained unassailable to date, and is, indeed, borne out all along the line by such data as we find in chimney sweep's cancer (Pott, 1775), cancer of the month in smokers or betel-nut chewers, of the stomach in gastric ulcer, of the gall-bladder in biliary calculus, of the abdomen from the kangri baskets carried by charcoal burners in Kashmir (Neve, 1910), cancer in aniline workers, X-ray operators and mull spinners (Leitch), in horses and draught cattle from chafing by ropes or harness, and experimental cancer from injection of tar (Bayon, 1912) or other irritants. The theories of Thiersch (disturbance of equilibrium between epithelium and connective tissue) and Waldeyer (replacement fibrosis of ageing epithelium) were subjected to further modifications by Hauser (1890) and Hansemann (1902). About 1872–5, Cohnheim's view of a congenital foundation or *Anlage* for cancer in the shape of displaced embryonal rests, began to dominate the field. Askanazy's modification of Cohnheim's view was "embryonic cells isolated in space and time." Cohnheim's theory was further modified by Ribbert (1904–11) to the effect that undifferentiated epithelium, whether of embryonic or of extra-uterine origin, may proliferate into cancer through an inherent power of compensatory hyper-

trophy (Weigert's law), without reference to external stimuli.[2] With the study of the splitting or reduction of chromosomes in the nucleus of dividing cell or fertilized ovum, controversy was shifted to mitotic processes in the nucleus of the cancer cell. Perhaps the most extraordinary theory advanced was that of the late Dr. A. F. A. King, of malarial fever fame. In 1913, he maintained that proliferation of cancerous tissues is due to the actual fertilization of normal epithelial cells by wandering spermatozoa!

Up to the very end of the 19th century, then, investigation of cancer had remained in the descriptive, static, theoretical or controversial stage, and was therefore at a standstill. The various theories of bacterial or parasitic origin amounted to nothing, and the only real advance was in the extended lease of life under surgical treatment, from the four months allotted by Paget to the five years gained by such block-dissections as those of Halsted, Crile and Wertheim. The experimental or forward-moving phase of cancer investigation is largely the work of the 20th century.[3] Dupuytren's experimental injections of cancerous material (*circa* 1807) were negative and negligible, and the Society for investigating the Nature and Cure of Cancer founded in 1802 by Matthew Baillie, Home, Abernethy and others was equally unfruitful. In 1889, Arthur Hanan, of Zürich, made the real start in experimental transplantation of epithelioma in white rats, but his work, although preceded by Novinsky (1876), Wehr (1878), Cornil and others, remained unrecognized until its confirmation by Moran (1894) and Borrel (1903), and he committed suicide from disappointment. Inoculability of sarcoma in rats was established beyond doubt by Leo Loeb in America (1901) and Jensen in Denmark (1903), who carried rat-sarcoma through 19–40 generations of rodents without change in microscopic structure. During 1900–1921, many societies and periodicals for the collective investigation of cancer were estab-

[2] In 1876, the brilliant and short-lived Franz Boll (1849–79) had stated that all tissues possess, in themselves, the spontaneous capacity of proliferating into pathological processes. What he missed was the pseudo-embryonic character of these processes.

[3] For two extended articles on recent work, see Krumbhaar: Ann. Med. History, N. Y., 1925, VII, 132–140 and Bayon: South African Med. Rec., Cape Town, 1925, XXIII, 522–536.

lished all over the world. Ehrlich (1906) demonstrated that rat and mouse cancer are specific for these animals by zigzag transplantations from rat to mouse and *vice versa*. In 1911–14, Peyton Rous demonstrated the specificity of sarcoma in the mesoderm of Plymouth Rock chickens by experimental transplants and inoculation of cell-free filtrates. Extravital cultivation of malignant tissues was established by Carrel and Burrows (1911), extended to an indefinite period by feeding the culture with chicken muscle by A. Fischer (1925), while Drew showed that malignant tumor cells produce a growth-inducing substance (Carrel's trephone), as in the case of injured normal cells. The demonstration of the effect of scarlet-red and other dyes on tissue-proliferation by B. Fisher (1906), led Bayon (1912), Yamagiwa and Ichigawa (1916), to the experimental production of epithelioma in rabbits by injections of tar products, while Leitch produced carcinoma, epithelioma and sarcoma in laboratory animals by potassium arsenite, paraffin and other "carcinogens." X-ray cancer, while frequent in man, only occurs in laboratory animals after prolonged exposure (Pierre Marie). The effect of nematode worms in the development of malignant tumors was first noticed by Borrel (1910) and was carried to triumphant demonstration by Fibiger under conditions of tremendous difficulty (1914). He identified the nematode (*Spiroptera neoplastica*) by constructing a model from serial cross-sections, eventually found the host of the parasite (*Periplaneta orientalis*) in a sugar refinery, which burned down, and could only keep his experiments going by feeding cockroaches with ova and rats with the infested cockroaches. More than half his rats developed carcinoma with metastases. In like manner, Bulloch and Rhodenburg got sarcoma in rats, by feeding with *Cysticercus fasciolaris*. Leitch produced cancer of the gallbladder in a guinea-pig by insertion of human gallstones. All these experiments confirm the Virchow theory of irritation. Resistance or immunity against second inoculation is induced by successful inoculation and can be stimulated by radiation. By careful selective breeding, Maude Slye has produced generations of mice that are absolutely resistant or particularly susceptible to cancer. Resistance appears to be the Mendelian dominant, susceptibility the recessive. Murphy's experiments (Rockefeller Institute) seem to show that resistance to cancer depends upon lympho-

cytosis; and that such lymphocytosis may be promoted by gentle X-ray stimulation and destroyed by strong stimulation. A chick-embryo may be rendered as resistant to a grafted tumor as an adult by feeding with lymphoid tissue and cancer grafts will not grow upon areas in adult mice which have been previously exposed to an erythema dose of X-rays. This suggests the rationale of radiotherapy in cancer. Lazarus Barlow has formulated the theory that squamous-celled carcinoma yields best to small doses of radium over large stretches of time and columnar celled carcinoma to large doses over short intervals of time ($D = Q \times t$).

We think of cancer as a malignant anti-social proliferation of pseudo-embryonic cells at the expense of the rest of the organism. In the end, this process does not differ in appearance from ordinary granulating tissue, as Virchow originally noted. Thus the net result of a hundred years of pathological theorizing points to a bio-chemical (virtually infective) process,[4] not of orthodox type, but of the filterable virus type of smallpox, rabies, trachoma or serpent poisoning. Such viruses, as maintained by Ehrlich (atrepsy), and proven by Kyes, are resolvable into two or more components, innocuous in themselves, but capable of producing infection when combined. Upon this hint, Gye and Barnard have apparently obtained two such negative components of the Rous chicken sarcoma virus by (1) killing a cell-free filtrate with chloroform and (2) by allowing a "primary culture," obtained by diffusion, to stand until its potency is *nil*. Combined, these two negatives produce a positive result, whence it is inferred that the inert primary culture contains the basic virus and the chloroformed filtrate a specific chemical substance necessary to nourish the virus and peculiar to the particular type of tumor. If this be true, then all malignant tumors have an identical virus and differ only in respect of specific nutritive activators. Even so, it is still a far cry from mouse sarcoma to cancer in human beings. Photography of "germs" is of secondary importance, and judgment must be suspended. But, in these experiments we have undoubtedly a new departure, which, if shown to be viable, will be a brilliant confirmation of the reasoning on Ehrlich's Harben Lectures of 1907.

F. H. Garrison

[4] In 1912–14, von Behring indicated that pathological processes in poisoning and detoxication are analogous to, if not identical with those in infection and immunity.

ABSTRACTS OF PAPERS DELIVERED BEFORE THE NEW YORK ACADEMY OF MEDICINE AT THE STATED MEETING OF FEBRUARY 4, 1926

THE SIGNIFICANCE OF THE LEUCOCYTE COUNT AS AN INDEX OF THE RHEUMATIC INFECTION AS MANIFESTED IN CHILDREN

MAY G. WILSON, M. KOPEL

The determination of the onset, degree of activity, duration and quiescence of the rheumatic infection is of practical importance in diagnosis, prognosis and treatment.

The leucocyte count is taken as an index of infection in many diseases.

In this investigation an attempt has been made to evaluate the significance of the leucocyte count as an index of infection in children exhibiting the varied manifestations of the rheumatic infection.

The ages of the children ranged from 4 to 15 years. In all a total of 384 leucocyte determinations on 88 cases are included in this study.

The leucocyte count in children exhibiting the following rheumatic manifestations were studied:

1—Acute and subacute rheumatic fever with arthritis and fever.

2—Active chorea.

3—Recurring growing and joint pains (without fever or arthritis).

4—Rheumatic heart disease.

a—Potential cardiacs (history of previous rheumatic infection).

b—Chronic cardio-valvular disease.

1—Class I (normal exercise tolerance as indicated by normal vital capacity).

2—Class II A (slightly diminished exercise tolerance as indicated by vital capacity — 10 to 25 per cent.).

Class II B (greatly diminished exercise tolerance as indicated by vital capacity — 25 to 35 per cent.).

3—Class III (Cardiac failure as indicated by symptoms, physical examination and a vital capacity of —30 to 70 per cent.).

Averages of the leucocyte count obtained for each symptom group were computed. Frequently the same case will be present in more than one group with more than one count.

Leucocyte curves of individual cases observed for periods of a year or more were also included for analysis.

Results

A comparison of the individual and the average leucocyte counts obtained for each symptom group is of interest. These findings may be summarized as follows (See Chart I):

For 16 cases with acute and subacute rheumatic fever (with arthritis) the average leucocyte count was 13,200. The range was from 8,000 to 23,200, 91 per cent. of the counts being above 9,000 cells. Salicylates in the usual dosage tended to lower the leucocyte count but did not bring it down to normal at the height of the infection. Here the degree of leucocytosis seemed to be proportional to the febrile reaction.

For 14 cases with active chorea, the average leucocyte count obtained was 10,700 with a range of from 8,900 to 13,200 cells, 94 per cent. being above 9,000.

For 25 cases with an immediate history of recurring growing and joint pains (without fever, above 99° or evident arthritis), the average leucocyte count was 10,000 with a range from 5,800 to 14,900; 68 per cent of the counts being above 9,000 cells. Salicylates brought the count down to normal in many cases. The average count with salicylates was 9,000 compared with an average of 10,800 for those not receiving salicylates. In many of these cases arthritis and carditis intervened during the period of observation. Frequently the moderate leucocytosis observed in cases with growing and joint pains was the only indication of the infectious nature of these symptoms.

Leucocyte Count in Children with Rheumatic Heart Disease:

The average leucocyte count for 16 cases of the potential group was 7,000 with a range of from 5,200 to 8,500 cells, 100% being below the upper limit of normal.

The average leucocyte count for 37 cases of chronic cardio-valvular disease (Class I) was 7,700 cells, with 93% of the counts below 9,000. The range was from 5,200 to 9,900 white blood cells, with 2 cases showing counts of 14,000 and 13,000 cells, respectively.

The low average leucocyte counts observed in these two groups were confirmative evidence of the quiescence of the infection as determined by clinical history, physical examination and vital capacity measurement.

These average counts may also serve as control counts, indicating the upper and lower limits of normal.

The average leucocyte count for the 12 cases of rheumatic heart disease (Class II A) was 9,700 cells with 67% above 9,000, the range being from 5,000 to 15,000. These cases were afebrile, 6 cases had persisting rheumatic nodules. The majority of the cases were convalescing from a recent carditis. In a few cases the increased leucocyte count was the first evidence of the ensuing rheumatic arthritis or carditis.

These groups comprise the types of cases in which it is most difficult, on physical examination alone, to determine the activity or quiescence of the rheumatic infection.

The average leucocyte count for 10 cases with chronic cardio-valvular disease (Class II B) was 10,900, 86% being above 9,000 cells, with a range from 5,200 to 16,800. All of these cases were convalescing from a recent carditis. The associated symptoms of active infection were nodules, pallor and a low grade of fever 99 to 100°.

In this group the leucocyte count is of prognostic value, indicating the persistence or quiescence of the infection.

The presence of a low leucocyte count in some instances, despite the presence of other evidence of activity, is to be noted in passing.

In 15 cases with carditis (Class III) the average leucocyte count was 14,300 with a range of from 5,100 to 25,000 cells, 94% being above 9,000. These cases had definite signs of cardiac failure; *i.e.*, dyspnea, orthopnea and in some cases edema. Other symptoms of infection were fever 100 to 103°, nodules and pallor.

The leucocytosis here observed is confirmatory evidence that the symptoms of cardiac failure in childhood are due to active

infection of the myocardium rather than mechanical cardiac disablement.

A further comparative analysis of the average leucocyte count for each symptom group is of interest. (See Chart 2.) Here it may be seen that the highest leucocyte counts were observed in the cases with carditis, the lowest in the cases with recurring growing and joint pains. The average counts for cases without clinical symptoms of activity were within the normal range.

If the grade of leucocytosis may be considered as an index of the degree of infection, these data would indicate that the most severe infection was present in the patients with carditis and a mild infection in patients with growing and joint pains. Such an inference would be in accord with the clinical course of the cases observed.

CONCLUSION

Repeated leucocyte counts in children with rheumatic infection would seem to be of some clinical value in diagnosis, prognosis and treatment.

CERTAIN OBSERVATIONS ON THE COURSE OF RHEUMATIC HEART DISEASE

JOHN WYCKOFF

This paper reports certain observations made during the past six years on the natural history of patients suffering from rheumatic heart disease. The results of an analysis of carefully recorded case histories of 50 patients who had been under observation at the Bellevue Cardiac Clinic are reported and such observations compared to observations made upon morbidity statistics from the same clinic.

It was shown in these 50 cases that during the time from first rheumatic infection to death 55.9% of such time the patients were free from cardiac symptoms, 38.4% of the time they had symptoms but not so severe as to wholly incapacitate, and 5.7% of the time the patients were wholly incapacitated. In the time from the first known heart involvement on the part of the patient to death, 33.5% of the time the patients were without symptoms,

51.8% they had symptoms but not so severe as to wholly incapacitate them, and 8.6% they were in complete failure.

It was shown that in 50 cases followed to death 21, or 42%, developed auricular fibrillation at varying times between a few days and six years before death.

Of the patients dying 98% died before the age of 50. The mean age of death of the sample was 29.1 years. This age incidence of death was compared with three other samples of age morbidity rate which the author has observed, and though the percentage of deaths after 50 is undoubtedly extremely low, all other samples seemed to show that less than 10% of patients with rheumatic heart disease live past their fiftieth year.

A chart showing graphically the incidence of rheumatic infection and auricular fibrillation in these cases was shown, and it was demonstrated that the 50 patients fall into four clinical groups.

Group I. Acute, active fulminating.

Cases who die during the first attack of carditis, consisting of 4% of the total.

Group II. Subacute, or chronic active.

Cases who show constant signs of activity for years—14% of the total.

Group III. Recurring rheumatic carditis.

Characterized by periods of activity at frequent intervals, but definitely inactive between times—12%.

Group IV. Inactive rheumatic carditis.

Cases which after an initial active stage become inactive and stay that way for years, sometimes until death (64% of the cases). This group is subdivided into a subgroup A in which the initial activity is comparatively short lived (58% of total) and a subgroup B in which it lasts several years before coming inactive (6% of total). Three cases, or 6%, it was impossible to classify.

Charts were shown which demonstrated that one of the factors in reducing longevity in chronic rheumatic heart disease was the persistence of activity, and also that the age of the first infection had no influence as to whether the activity would persist or become quiescent.

The cause of death of the 50 reported cases was as follows:

USE OF DIGITALIS IN CHILDREN WITH HEART DISEASE

HAROLD E. B. PARDEE

Children who show subjective or objective signs of cardiac failure are almost always helped by digitalis. Children who do not have any evidence of the cardiac function do not derive any benefit from digitalis. There is no contraindication for giving digitalis in the presence of fever nor is the fact that the patient is not sick enough to be in bed a contraindication.

It is not so much the total amount of digitalis given which effects the heart, as the concentration of digitalis in the body at a given moment. At a certain concentration therapeutic effects are obtained, at a greater concentration toxic effects appear. The concentration depends upon a balance between the total dose and the daily output. The administration must take into account three facts:

1. Therapeutic effects are obtained on the average from 2 minims of the tincture per pound of body weight or 2 grains of the leaf for 10 pounds.
2. Different children vary greatly in susceptibility so that toxic symptoms may develop in susceptible children from half this dose.
3. During each 24 hours some of the drug is destroyed or excreted from the body.

It is never proper to give the full therapeutic dose all at once on account of the danger of poisoning susceptible children. For an initial dose 1 minim of tincture per pound of body weight or one grain of the leaf for 10 pounds is quite proper. Twelve hours after this dose, if it is necessary to continue, use 20 minims or 2 grains twice a day, watching for therapeutic or toxic effects. When therapeutic effects appear do not stop the drug but reduce the dose to 10 minims of tincture or one grain of leaf twice daily. This might be called the maintenance dose for it is equal to the daily exeretion. When toxic signs appear stop digitalis until they have gone. Then resume with the maintenance dose.

For ambulatory patients start with 20 minims of tincture or two grains of the leaf at 7 A. M., 2 P. M., and 9 P. M., until the

child has received one minim per pound of body weight plus one extra dose for each day of administration. Then continue this dose twice daily until some effect is observed, either toxic or therapeutic. Then proceed as described. The maintenance dose should be continued for several weeks. For children less than 30 or 40 pounds in weight we are in doubt about the maintenance dose. The initial dose of one minim per pound is right, but after that we are uncertain. I believe that 15 minims of the tincture twice daily is proper, except for those less than 15 pounds, who should receive seven minims three times a day.

There is rarely need for intravenous medication in children with heart disease. If it seems advisable, however, for children who have not had any digitalis previously, the proper dose is one minim per pound of body weight of digitan solution; 1.2 minims per pound of digalen and digifolin. For those who have had digitalis previously, we should not give more than one-tenth of this dose, but can repeat this every hour or two until an effect is evident.

ABSTRACTS OF PAPERS DELIVERED BEFORE THE NEW YORK ACADEMY OF MEDICINE AT THE STATED MEETING OF FEBRUARY 18, 1926

DISTURBANCES OF URINATION DUE TO SYSTEMIC DISEASES AND DRUGS

HARRY GOLD

Urinary disturbances occur with considerable frequency in most of the broader classes of systemic disease: in metabolic disorders, endocrine disorders, blood diseases, circulatory disturbances, disturbances of the central nervous system, acute and chronic infections, as evidence of reflex conditions, and in the use of certain drugs.

In this paper a certain number of systemic conditions are described briefly, particularly some of those in which the urinary symptoms, being the outstanding complaint of the patient, might present problems for diagnosis.

Patients with diabetes mellitus may present such marked frequency of urination due to the rapid filling and nervous state of the bladder as to mask the large quantity of urine passed daily. The different types of nephritis present various urinary disturbances. The blood dyscrasias form a large group of diseases in which the essential urinary disorder is hematuria. The urinary disturbances of pernicious anemia due to involvement of the central nervous system are discussed. Functional urinary disturbances in patients with tuberculosis due to tuberculous toxemia and cured by tuberculin administration are described by Kovats in 1923. Steifler and Volk in 1915 and Lion in 1922 describe similar urinary disorders due to prolonged exposure to cold. Retention of urine due to spasm of the sphincter occurs in tetany. Urinary disturbances occur in association with various forms of arthritis, in peliosis rheumatica, oxalic acid gout, recurring polyarthritis described by Boeminghaus. Disturbances of urination are described by Duke as a manifestation of allergy. Examples are cited of frequency, pain, incontinence and retention as the result of a reflex from some focus, as the intestinal tract and ureter.

Drugs do not commonly disturb bladder function though several drugs are known to have a direct action upon the bladder wall and sphincters. The silver preparations introduced into the urethra may produce a chemical cystitis. Various urinary disturbances follow poisoning by phosphorus, arsenic, bichloride of mercury, phenol and the cresols. The salicylates, the barbituric acid series of drugs, and quinin taken over long periods and in excessive amounts may cause hematuria. Strangury and hematuria are produced by urotropin, hemitol, cystopurin and hexamethylenetetramine. Examples are cited of volatile oils producing various urinary disturbances, terpintine, oil of santal, copaiba, cubeb, juniper, apiol, savin. Chrysarobin and cantharides may cause urinary disorders. A number of observers have reported interesting bladder disturbances in the dye industries, in those working with benzol, toluol and naphthalin. In chronic ergot poisoning the bladder may participate in the general muscle contractures resulting in involuntary urination and tenesmus. Bladder disturbances occur in acute morphin poisoning. Czapek and Wassermann reported cases of acute re-

tention of urine following morphin in therapeutic doses. This condition may be more common than is generally suspected.

THE SIGNIFICANCE OF DISTURBANCES OF THE FUNCTION OF THE BLADDER

ALFRED T. OSGOOD

By permission of the Chairman of the Section, I am taking the liberty of enlarging the scope of the subject assigned to me to include the consideration of the significance of disturbances of the function of the bladder from the standpoint of the urologist. In the brief statement expected, this can be merely fragmentary, indicating some of the chief features only. Before considering the significance of these disturbances, let us consider what the functions of the bladder are and what we mean by disturbance of these functions.

The Bladder.—The bladder is the reservoir for storage of urine—a waste fluid which is discharged from time to time. The bladder comprises:

1. Inlet apparatus.
2. Storage apparatus.
3. Discharge (outlet) apparatus.

The outlet or discharge apparatus consists of two valves surrounding the outlet tube which are in tonic contraction except when incited to dilate through the reflex of micturition. The act of micturition is under volitional control, so that any amount of urine may be expelled at will, or an amount much greater than that rated as normal may be retained at will. That is to say, the volume of fluid may vary within wide limits for the inception of the reflex of micturition. The reflex may be initiated and carried out regardless of the amount of fluid in the reservoir; it may be voluntarily controlled in spite of sharp excitation of the reflex mechanism when distended with a very large amount of fluid, 1500 cc., for instance. A bladder entirely empty or holding but a few drops will react with great frequency and marked expulsive force to the influence of an acute inflammation in the posterior part of the urethra or a jagged foreign

body caught in this part of the urethra. The bladder, isolated from its connections through nerves with the spinal cord and all the nerve plexuses, will automatically collect, retain, and discharge urine in the living animal. The bladder after death retains fluid—*i.e.*, at death the sphincters retain some tonic contraction.

The process of filling and the process of distending the bladder up to capacity take place unconsciously without sensation, while retention beyond normal capacity and the proper performance of the discharge of any amount collected are conscious and controlled acts.

The physiology of the bladder must take into consideration the tonus of the bladder musculature as it reacts to the distention of the cavity with fluid. This tonic contraction may be measurable within rather wide limits as an estimate of the normal, but the contraction of the bladder muscles is only a part of the function of micturition, and action of the sphincters is also a part. To my mind, clinically, the function of the sphincters is the more important, and, so far as pathological conditions are concerned, it is lesions which affect the sensory sphere within these sphincters that induce the contraction of the bladder muscle and raise the tonus of the bladder when the reflex for micturition is initiated by sensory abnormality in the urethra. Most physiological experiments are carried out upon animals from which there is lacking interpretation of the sensory reactions and of voluntary inhibition and control. In the human being, similar experimentation is often impossible, and the sensory reactions are perhaps the most important feature of all experiments. For instance, every experiment in which a catheter or other instrument is passed through the highly sensitive urethra must take into consideration the reaction to this sensation in which voluntary inhibition, voluntary muscular control of the external sphincter, play an important part in the effect upon function of the bladder.

Disturbances of the function of the bladder are indicated to us clinically by the following signs or symptoms:

1. Disturbances of normal sensation (pain?),—sensory abnormality.
2. Disturbance of the normal frequency of evacuation,—abnormal *in*frequency, abnormally increased frequency.

3. Abnormal retention in the reservoir: (a) partial; (b) complete.
4. Incontinence: (a) partial; (b) intermittent; (c) complete.
5. Incoördination of micturition.

Disturbances of normal sensation are various,—discomfort, accentuated desire for urination, uncontrollable (imperative) demand for urination; pain, referred to the region of the bladder or to its outlet indefinitely behind the symphysis, or in the perineum or urethra. I am inclined to believe that a distinction can be made between a painful sensation referred through the abdominal wall above the symphysis to the bladder itself and the discomfort or pain (also often and commonly interpreted as bladder pain), referred (when accurately described or describable) to the bladder outlet,—a demand for unination, painful efforts at control of the demand for urination, voluntary control or inhibition of the micturition reflex.

The normal bladder *mucosa* possesses a very low grade of sensibility. A stone often lies unperceived in the bladder for many years. Burn the *mucosa* of the bladder itself with the actual cautery, and the patient has little or no response in pain or in disturbance of bladder function. New growth of the *mucosa* goes unperceived, commonly, until bleeding occurs. Let a kidney pour pus from a pyonephrosis into the bladder for years, and often no disturbance of bladder function takes place. Look at the mucous membrane of such a bladder from which you have withdrawn several ounces of pure pus, and it is in many (not a few) cases perfectly normal after storing such material maybe for years. Per contra, burn through the mucosa into the *sub*-mucous or muscular coat, then pain and abnormally frequent bladder contractions may follow. When a growth extends deeper than the mucosa, pain and disturbed function are the rule. An ulceration or inflammation involving the submucosal coat is one of the distressingly painful conditions with greatly disturbed function—interstitial cystitis. We cannot, however, go so far as to aver that sensory nerve endings are found only in the submucous or muscular coats.

Cystitis.—Inflammation of the tough mucous membrane of the bladder is due to infection from the inlet or from the outlet.

A diagnosis of cystitis cannot be made by means of a catheter or by any symptoms. A diagnosis can be made only by viewing the mucous membrane. I am almost prepared to maintain (with some qualifications and reservations) that cystitis does not produce pain; that cystitis does not give rise to temperature and chills; that cystitis per se does not disturb bladder function; that cystitis is easily and promptly curable. Cystitis is curable only upon removal (if possible) of the source of infection by which it is maintained.

This is an old story. It is the duty of the urologist to preach it constantly on every available occasion, and to insist that cystitis demands a prompt search for some other lesion which may be of maximum importance. To treat cystitis without finding its cause is, to be sure, sometimes beneficial, even successful, but it is futile in the majority of cases.

Parts not anatomically the bladder itself.—1. Filling apparatus. 2. Discharge apparatus.

The Filling Apparatus.—Disturbances of function of the bladder ascribable to the filling mechanism must include all the disturbances that arise from products of disease of the kidney and ureter.

1. Calculus, ulceration, and stricture in the lowermost portion of the ureter give rise to pain and abnormally frequent urination because the muscular fibres of the lower ureter extend into the trigone toward and into the outlet of the bladder (the urethra), and the sensations of the lower end of the ureter are interpreted only in the trigone and vesical outlet. A pain, then, of the lowermost portion of the ureter is practically a pain felt in the vesical outlet. Furthermore, these lesions which induce sensory abnormality in the lower ureters produce disturbances of the frequency of evacuation, or incontinence, by initiating the reflex of micturition. The ureters (inlet apparatus), when the seat of pathologic lesions, may be the source, then, of disturbances of the functions of the bladder.

The Outlet Apparatus.—These parts, comprising the outlet apparatus, embryologically and anatomically considered, belong to the urethra and to the functions of the urethra.

The Sphincters.—Internal—smooth muscle at vesical outlet = tonic contraction,—dilated only through reflex—not directly

volitional. *External*—striated muscle surrounding urethra between layers of the triangular ligament = tonic contraction ± voluntary contraction,—dilatable through reflex ± volitional control.

All the disturbances of this discharge mechanism are indicated by the same signs as those mentioned for the bladder,—*i.e.*, all signs (pain, abnormal frequency, retention, and incontinence) of disturbance of the function of the bladder are those of the outlet = the sphincters. Each sphincter may act adequately alone. This is plainly demonstrable in surgery, as well as experimentally. (1) Remove the entire internal sphincter, amputating the bladder neck with the entire prostatic urethra and prostate; suture the bladder and membranous urethra; if the external sphincter is uninjured, perfect retention, normal capacity of bladder, and fully controlled function remain; or cut the sphincter internus and the external sphincter does all the work perfectly. (2) Mutilate or open the membranous urethra about which the external sphincter acts, so that an open sinus persists at this point; if the internal sphincter is normal, perfect retention, normal bladder capacity, large capacity under volitional control, and fully controlled function result. (3) Injure both internal and external sphincters by dividing them, for example, and incontinence results.

Urethral Lesions.—Inflammation, stone, traumatism, new growth (hypertrophy of prostate and cancer) of prostate all produce abnormal sensation,—perhaps pain in that part of the urethra about which the sphincters act, and this gives rise to both involuntary and voluntarily induced abnormal disturbance of frequency of urination.

Retention of urine, partial or complete, may be due to stone obstructing the outlet or to growth or fibrous tissue interfering with the normal function of the internal sphincter producing readily understood mechanical interference, to be mentioned only in passing.

Incontinence of urine indicates a failure of both internal and external sphincters to perform in normal fashion. Impulses not under control bring about evacuation of the bladder. In some cases, in many probably, the sensory nerve endings in the urethra are so injured or submerged in growth or congestion or inflam-

mation that natural recognition of the desire or need for urination is lost, with the result that an automatic reflex may take place from time to time—intermittent incontinence.

Paralysis of both sphincters,—wide open internal sphincter with no tonic contraction and no ability to voluntarily contract the external sphincter,—(resulting in complete continuous incontinence with bladder contracted and urine flowing out through the urethra as it is ejected from the ureters into the bladder),—is seen with nervous disease, such as tabes dorsalis and in serious injury of both sphincters. All varieties of incoördination take place with such a disease as tabes dorsalis. Here we may have any one or any combination of injuries (stimulation or destruction) of centres in the cord. Sometimes individual parts only are affected, such as paralysis of the internal sphincter with intact external sphincter and detrusor; at times, paralysis of the external sphincter's voluntary control only; sometimes loss of sensation seems to be the chief result. Practically normal sphincters with paralysis of the detrusor is, I believe, demonstrable in some cases of locomotor ataxia.

The clinician, then, considers the significance of dysfunction of the bladder as a disturbance not so much of the bladder itself, as a disturbance of its outlet and of the mechanism which maintains the normal holding capacity and the discharge of its content through the coördinated opening of its valves. The major disturbances of the function of the bladder are due to disease or abnormality in or connected with this outlet mechanism. The symptoms, pain, frequency, retention, and incontinence are significant of disturbance of the outlet mechanism. The great majority (in numbers of cases, at least) of disturbances of the function of urination are due to lesions located in the urethra, where these valves lie.

Disease of the bladder itself is usually promptly determined by examination with a cystoscope. The significance of disturbances of the function of the bladder must always be sought first, in or from the urethra—male or *female*; second, in or from the ureters; and, third, in the bladder itself.

I present these facts in this way because text-books on anatomy, physiology, and urology,—from which most of us have gained our knowledge of bladder function and their disturbances,

—fail to bring about a proper appreciation of the fact that the urethral sphincters are the chief features of the bladder, and this leads to a failure on the part of the profession generally, and a failure on the part of trained urologists even, to fit the signs and symptoms to the facts, resulting in serious loss to the individual patient in a large number of cases of disturbance of the function of the bladder.

BLADDER DISTURBANCES IN BRAIN AND SPINAL CORD TUMORS

CHARLES A. ELSBERG

The subject is of importance to the genito-urinary specialist because bladder disturbances may occur as early symptoms of new growths of the brain and spinal cord. Patients have been treated for considerable periods for supposed vesical disease and cystitis, who had compression of the spinal cord from tumors or enlarged blood vessels or in whom the symptoms were due to a neuritis of the roots of the cauda equina. Patients with bladder symptoms apparently due to an enlarged prostate were seen in whom the bladder symptoms were due to the spinal cord lesion rather than to the enlarged prostate.

In patients with new growths of the brain and spinal cord (excepting those which involve the sacral cord and the roots of the cauda equina), the bladder disturbance is either an increased irritability or a retention of urine with perhaps secondary incontinence.

Of 165 patients with tumors of the brain, 69, or 41%, had mental disturbances, and 60, or 36%, had some disturbance in emptying of the bladder; 23% had occasional or continued incontinence. The patients with frontal lobe tumors, in whom mental disturbances were frequent, often had urinary disturbances; thus three-quarters of the patients with frontal lobe tumors had some disturbance of the bladder function, and almost one-half had occasional or continued incontinence; only one-tenth of the patients with posterior fossa tumors, one-seventh of those with parietal lobe tumors, and one-fifth of those with temporal lobe tumors had incontinence. On account of the greater frequency

of mental disturbances in tumors of the left frontal lobe, incontinence occurred more often in left frontal tumors than when the growth was on the right side.

If the patients in stupor or coma were excluded, urinary disturbance occurred about so often in cortical as in subcortical growths.

In tumors of the spinal cord, bladder disturbances occurred much more frequently in extramedullary, extradural and conus and cauda tumors than in intramedullary growths. There is no particular section of the cord that is especially concerned with control of the vesical sphincter, but the lower down in the spinal cord the tumor, the greater the frequency of bladder disturbances.

Bladder disturbances usually appear late in spinal cord tumors excepting in extradural malignant disease.

In patients with intramedullary tumors, interference with bladder function, although more rare, appears earlier in the course of the disease.

Regarding bladder disturbances in spinal cord tumors, the following may be said: If the spinal symptoms have lasted less than six months, difficulty in emptying the bladder is most frequent; if they have lasted from six to twelve months, difficulty in urination or incontinence are frequent; and when the symptoms and signs of spinal compression have lasted several years or more, incontinence either due to overflow or true paralysis of the sphincter muscles is most frequently observed. It seems to be the rule that there always is a marked disturbance of sensation and motor power before distinct bladder disturbances occur.

ABSTRACTS OF PAPERS PRESENTED BEFORE THE SECTION OF OTOLOGY, FEBRUARY 12TH, 1926

PAPILLEDEMA FROM THE VIEWPOINT OF THE OTOLOGIST

EDWARD B. DENCH

The speaker made attempt to discuss the finer physical differentiations between simple edema of the disc and edema combined with inflammatory changes of the optic nerve and retina. He emphasized the fact that simple papilledema of the optic disc was mechanical in origin and that it might be present in any of the intracranial complications of middle ear suppuration. The condition occurs less frequently in extradural abscess than in any of the other intracranial complications, and is probably most common in diffuse meningitis than in any of the other complications. Simple papilledema is due to increased intracranial pressure,—an optic neuritis or a neuroretinitis to an inflammatory process in the structures involved. By some this is thought to be a direct extension of the inflammatory process within the cranium. Attention should also be drawn to the importance of papilledema as a sign of intracranial neoplasms. Such cases presenting aural symptoms not infrequently come to the otologist in the early stages of their affliction.

In closing, the importance of fundus changes in lues, diabetes, and nephritis were pointed out. Aural symptoms may be a prominent feature in all of these conditions and these cases are often first seen by the otologist. The writer also spoke of the advisability of each otologist becoming familiar with the use of the ophthalmoscope.

THE SIGNIFICANCE OF PAPILLEDEMA IN NEUROSURGERY

WILLIAM SHARPE

In the diagnosis and surgical treatment intracranial lesions, a competent ophthalmoscopic examination is possibly the most important single test in a neurological examination; without a

careful fundal investigation, no neurological examination is complete. Normal fundi, naturally, do not exclude intracranial surgical lesions.

The term papilledema of the degree of "choked discs" presupposes the earlier milder stages of papilledema of the degree of edematous blurring of the nasal halves and temporal margins indicative of a mild increase of the intracranial pressure and these findings can be confirmed or disproven by the accurate measurement of the pressure of the cerebrospinal fluid at lumbar puncture with the spinal mercurial manometer. Experimentally, the various stages of papilledema can be carefully studied by producing an internal hydrocephalus in dogs. No edema of the optic discs in the absence of sinus disease and local infective processes and in patients who are not myopic, should be considered within normal physiological limits without an accurate registration of the pressure of the cerebrospinal fluid using the spinal mercurial manometer.

The ophthalmoscopic findings in the following conditions were briefly discussed: Tumor, abscess, traumatic hemorrhage and cerebral edema, and in the internal and external types of hydrocephalus.

The following conclusions were expressed: careful ophthalmoscopic examinations are of the greatest importance in the differentiation of many intracranial surgical lesions; the signs of moderate intracranial pressure should be recognized and it should be realized that "choked discs" occur only as the result of high intracranial pressure; the spinal mercurial manometer is the most accurate means of determining the intradural pressure.

PAPILLEDEMA IN RELATION TO OPHTHALMOLOGY

CONRAD BERENS

Doctor Berens said that early diagnosis of papilledema is important and in the incipient stages it may be difficult to differentiate from papillitis and pseudopapillitis. Papilledema should make one strongly suspect the presence of brain tumor, but it should be considered as a late rather than an early diagnostic sign.

Greater swelling of the disc was usually seen in the eye with the lower tension but exceptions frequently occur. No important diagnostic conclusion could be made from the degree of swelling of the disc as to the probable location of a cerebral lesion, its extent or the length of time it had existed.

He believes that the mechanical theory of Manz and Schmidt-Rimpler combined with a toxic factor seemed to offer the most logical explanation of the production of papilledema.

Early operation may be indicated in patients who have small optic canals as shown by roentgenograms.

In treating papilledema neither the etiology nor the question of which theory in regard to the mechanism is correct, is as important to the opthalmologist as the question of saving useful vision. Therefore, if loss of vision is feared in papilledema and simple methods of treatment have failed, decompression should be performed if the pressure of the cerebrospinal fluid is raised. The procedure is practically without danger and may save useful vision.

In papilledema of undetermined etiology, it may be justifiable to inject vaccines or some other protein for the non-specific effect in raising cell resistance, in addition to using arsenic, mercury and iodine, and performing spinal puncture.

Surgical intervention in regard to the question of saving useful vision is more frequently resorted to, too late, rather than too early, in the treatment of papilledema.

In Baillart's new pressure gauge we have a way of determining the presence of increased intracranial pressure at an early stage. If these findings are confirmed by the spinal mercurial manometer, when spinal puncture is not considered too dangerous, early treatment of the causes of papilledema may be possible, for it is his opinion that choked disc is usually a symptom of high intracranial pressure.

ABSTRACT OF PAPER DELIVERED BEFORE THE SECTION OF OBSTETRICS AND GYNECOLOGY, FEBRUARY 23, 1926

THE SEDIMENTATION TEST—AN AID IN OBSTETRICS AND GYNECOLOGY

HERMAN L. FROSCH

The phenomenon of the varying rates of sedimentation of red blood cell in different diseases has been observed as far back as 1767. But it is only within the last five years that the medical profession has awakened to the diagnostic and prognostic aid that it may give. A simple method is described of doing this test.

A sedimentation rate of more than two hours is considered normal. A sedimentation rate of one hour or less indicates an acute infectious condition, medical, surgical or gynecological exists. An increasing sedimentation time means that the patient is improving; a diminishing sedimentation time is an indication that the patient is getting worse. This test is particularly important in tuberculosis.

A surgical patient having a sedimentation time of less than one-half requires an immediate operation. Very frequently the temperature and blood count are normal yet the sedimentation time indicates an acute infection, which on operation shows that the test was correct in its diagnosis of an acute condition.

The test is of no help in the diagnosis of pregnancy, but is of aid in the differential diagnosis from fibromyoma uteri, the sedimentation time being less in the former. But should the latter undergo degeneration, then it cannot be used to differentiate the two as the sedimentation time is about the same. Non-bleeding extra uterine pregnancies have the same sedimentation time as normal pregnancies. It is only when an ectopic ruptures, that the sedimentation time becomes rapid. Neither is it of aid in diagnosing eclamptic or pre-eclamptic conditions. During the post-partem period, the sedimentation time is less than one hour, so that if a toxemia or septicemia develops the best is of no aid.

The test is of most use to the gynecologist in adnexal disease both as to the time of operation and differential diagnosis. If

there is a question of differential diagnosis between ectopic pregnancy, ovarian cyst or any other tumor and pyosalpinx, then a sedimentation time of less than one-half hour rules out the former conditions. In a salpingitis, if we believe that no case should be operated on during the acute stage, then any sedimentation time in such a patient of less than one hour should mean watchful waiting. The more rapid the sedimentation time the more acute the infection. Especially should this test be used in cases of adnexal diseases having a normal temperature and normal blood count.

In malignancy the sedimentation time is rapid. Removal of the tumor brings the sedimentation time to normal. A recurrence of rapid sedimentation time indicates that the malignancy has recurred provided all other sources of acute inflammation have been eliminated.

Experiments have proven that the increased rate of sedimentation in the conditions mentioned is dependent on a relative increased globulin and fibrogen content of the serum.

Cases are cited to prove the statements made concerning the test.

Conclusions

1. Sedimentation time of more than two hours is considered normal.
2. An increasing sedimentation time means that your patient is improving. A diminishing sedimentation time means that your patient is getting worse.
3. The prognosis is poor in any case having a persistent sedimentation time of less than one-half hour.
4. Any surgical case having a sedimentation of less than one-half hour requires an immediate operation.
5. This test is of no aid in the diagnosis of pregnancy.
6. In gynecological pelvic conditions it is an aid both in the differential diagnosis and also as to the time for operation.

ABSTRACTS OF PAPERS DELIVERED BEFORE THE SECTION OF HISTORICAL AND CULTURAL MEDICINE, JANUARY 28TH AND FEBRUARY 25TH, 1926

EVOLUTION OF THE SUBJECT OF APPENDICITIS

ROBERT T. MORRIS

The subject of appendicitis belongs to the latter part of the 19th century and to the 20th century up to date. It has, however, covered three of the four eras in surgery in this short period of time. In the first, or Heroic Era, it is not unlikely that some of the abscesses belonging to appendicitis were opened by surgeons who knew nothing of the origin of the infection. In the second, or Anatomical Era, the appendix vermiformis was occasionally subjected to surgical procedures in operations belonging to what was called "typhlitis." The great advances in this particular phase of surgery were made almost explosively along the development of the third, or Pathological Era, of surgery. The leading idea during this era included the removal of all infected structures and all by-products of infection by means of the surgeon's art. This, however, meant a great deal of meddlesome surgery conscientiously performed, but harmful on the whole. In the fourth, or Physiological Era of surgery, the dependence is placed largely on the patient's ability to control infection. He is subjected to the least degree of surgery, which will suffice for turning the tide of battle in a case of acute appendicitis, and attention is given to conserving his protective resources. In addition to acute appendicitis, five separate and distinct kinds of chronic appendicitis have been recognized and classified.

INTIMATIONS OF PUBLIC HEALTH IN EARLY NEW YORK

DONALD B. ARMSTRONG,
Assistant Secretary, Metropolitan Life Insurance Co.

The records of early New York during both the Dutch and English occupation up through the first half of the nineteenth

century reflect the sanitary and hygienic problems of which the community and its leaders were conscious. One finds certain measures of personal hygiene and certain initial provisions for the control of medical service, including certain beginnings at the socialization of medicine. There is an early recognition of the need for sanitary regulation, for city planning, and for organized efforts to meet collectively, such requirements as prove to be beyond the range of individual capacity. The records are fragmentary, yet symbolic and indicative of the trend of the times—the pre-natal period of the sanitary awakening to follow.

Examples are cited, including the earliest official effort to regulate the practice of medicine, legislation for the control of midwifery, rules and regulations regarding the inspection of meat, water supply, street cleaning, drains, hogs, rubbish, filth, ashes, dead animals, ill-smelling cheese, etc.

Of some special interest, though perhaps to a degree aside from the main question, are early records on the problem of liquor control, including apparently a Dutch experiment with what we now know as the Canadian Quebec System. The results of early restrictive liquor legislation are apparently not inconsistent with Volsteadian experience.

The earliest fairly reliable mortality statistical records for New York City are found in a semi-centennial table of mortality covering the period 1804–53. There are here many curious reflections not only of the death certification procedure of the times but of the prevailing sanitary conditions of the city. Odd causes of death are noted, such as salivation, drinking cold water, mismenstruation, etc. The records reflect the terrible conditions that prevailed in New York City at the beginning of the nineteenth century, with yellow fever and cholera annual death rates per 100,000 of 344 and 1,557, respectively.

The situation was little improved until the work of Dr. Stephen Smith, his sanitary survey, and the establishment through his efforts of the Metropolitan Health Board.

The history of public health in New York City reflects the transition from the environmental to the personal, from sanitary policing to individual persuasion, from suppressive legislation to individual responsibility. In medicine, veering away from the early communism of the Dutch Colony, there has been noted a

successive period of expansion of the private practice of medicine with a gradual return to a greater degree of group medical control for large sections of the population. This has been followed by specialization on the one hand, and on the other, through the hygienic educational responsibilities of the profession, through the practice of periodic examinations, by the opening up of a much larger and greater field for the general practitioner—the private practice of preventive medicine. Public health work, especially in its more recent educational aspects, has more than kept pace with the growth of the city. In spite of our tremendous expansion in numbers, and complexity of organization, life in New York to-day is safer, happier, and longer than it was in the Manhattan of long ago.

PROCEEDINGS OF ACADEMY MEETINGS, 1926

Stated Meetings

January

ANNUAL MEETING

Thursday Evening, January 7th, at 8:30 o'clock.

ORDER

1. Reading of the Minutes.
2. Annual report of the President.
3. Reports of Council and Trustees.
4. Reports of Officers.
5. Reports of Committees.
6. Action on Constitution and By-laws.
7. Other Business.
   a. Nominations for Trustee.
   b. Appointment of Nominating Committee for 1926.
8. Addresses.
   a. Early days in the Academy, D. Bryson Delavan.
   b. Academy activities in our present building, Samuel W. Lambert.
   c. The future work of the Academy, Linsly R. Williams.

The proceedings of this meeting have been published in the February and March numbers of the BULLETIN.

STATED MEETING

Thursday Evening, January 21st, at 8:30 o'clock.

Program presented in coöperation with the Section of Medicine and the Section of Dermatology and Syphilis.

ORDER

I. Executive Session.

II. Papers of the evening.

a. Some considerations of the mode of infection and extension of erysipelas, John C. Doane, Philadelphia (by invitation).

b. Experimental basis of specific treatment of erysipelas, Harold L. Amoss, Baltimore (by invitation).

c. Pruritus, causes, effects and treatment, Sigmund Pollitzer.

d. Drug eruptions, George M. MacKee.

Discussion—

Chas. James White, Boston (by invitation).
John Stokes, Philadelphia (by invitation).
I. L .McGlasson, San Antonio (by invitation).
Howard Fox.
Hermann Goldenberg.
Walter J. Highman.
Charles M. Williams.

SECTION MEETINGS

January

SECTION OF DERMATOLOGY AND SYPHILIS

Tuesday Evening, January 5th, at 8:15 o'clock.

ORDER

I. Presentation of patients.

a. Cases presented from the Vanderbilt Clinic.

b. Cases from the Skin and Cancer Hospital, Charles Mallory Williams.

c. Cases from Fordham Hospital, Benjamin F. Ochs.
d. Miscellaneous cases.

II. Discussion.

III. Executive Session.

SECTION OF SURGERY

Friday Evening, January 8th, at 8:30 o'clock.

ORDER

I. Reading of the Minutes.

II. Presentation of Cases.
a. Three cases of undescended testicle, Carl Eggers.
b. Cases of undescended testicle, Franz Torek.
c. 1. Complete branchial fistula and cyst—excision.
2. Diffuse fibroma of eye-lids and cheek—plastic operation.
3. Cases demonstrating paper of the evening, Herbert Willy Meyer.

III. Papers of the evening.
a. The prevention of toxemia in superficial burns, Edward C. Davidson (by invitation).
b. Undescended testicle—with special reference to Torek's method of orcheopexy, Herbert Willy Meyer.

IV. General Discussion.

V. Demonstration of Instruments.
New automatic electro-mechanical apparatus for transfusion of whole unmodified blood, A. L. Soresi.

SECTION OF OTOLOGY

Friday Evening, January 8th, at 2:30 o'clock.

ORDER

I. Reading of the Minutes.

II. Demonstration of New Instruments.
Demonstration of a new instrument for the treatment of OMCC, with superheated air, John Guttman.

III. Presentation of Cases.
a. Presentation of patients showing post-operative results following simple and double modified radical operations for chronic mastoiditis, Hugh B. Blackwell.

b. 1. Case of jugular bulb suppuration following mastoiditis and sinus-thrombosis; operation; recovery.

2. Case of chronic middle ear and labyrinth suppuration; radical mastoid and labyrinth operation; recovery, John McCoy.

IV. Paper of the Evening.

Zinc ionization treatment for chronic discharging ears and allied conditions, John McCoy.

V. General Discussion.

SECTION OF NEUROLOGY AND PSYCHIATRY

Tuesday Evening, January 12th, at 8:30 o'clock.

From the neuro-surgical services of the New York Neurological Institute and the Mount Sinai Hospital and the Laboratory for Experimental Neurology, Columbia University.

ORDER

I. Case Presentations.

a. Cases illustrating differential section of the trigeminal root, Byron Stookey.

b. A case of tumor of the Casserian ganglion, E. D. Friedman.

c. A case of subdural exudate after cranial trauma, Ira Cohen.

d. Chondroma projecting into the spinal canal, A. S. Taylor.

II. General Discussion.

III. Papers of the Evening.

a. An air manometer for spinal manometric tests, C. B. Masson (by invitation).

b. A method for the study of changes of the size and shape of the ventricles in brain tumors, S. Silbert (by invitation).

c. Staining of tumors of the nervous system with silver, Wilder G. Penfield.

d. Intracranial pressure and the susceptibility of animals to convulsive seizures, F. H. Pike (by invitation) and C. A. Elsberg.

IV. General Discussion.

Section of Pediatrics

Thursday Evening, January 14th, at 8:30 o'clock.

ORDER

I. Reading of the Minutes.

II. Papers of the Evening.

a. The prophylactic value of older plasma and whole blood of convalescents, in measles, Sidney V. Haas, Julius Blum (by invitation).

Discussion by Wm. H. Park, Chas. Herrman, A. Zingher.

b. A physiologic study of chronic fatigue in school children, with special reference to the recognition and management, M. Seham, Minneapolis (by invitation).

Discussion by Frederick S. Lee., Ph.D., Charles Hendee Smith.

III. General Discussion.

Section of Orthopedic Surgery

Friday Evening, January 15th, at 8:30 o'clock.

ORDER

I. Reading of the Minutes.

II. Presentation of Cases, Case Reports, and New Instruments. From the staff of the Hospital for Ruptured and Crippled.

a. 1. Case of sacro-iliac arthritis.

2. Late results in an operation for paralytic valgus, Percy W. Roberts.

b. Bilateral congenital dislocation of patellae—2 cases in 1 family, Brainard H. Whitbeck.

c. 1. Osteochondritis of elbow.

2. Subluxation of 4th lumbar vertebra, Samuel Kleinberg.

d. Loose bodies in knee, with involvement of patella—2 cases, William L. Sneed.

e. Reinforcement of acetabulum for paralytic and congenital dislocations of the hip—3 cases, Armitage Whitman.

f. Cases demonstrating unusual vertebral injuries, Irvin S. Balensweig (by invitation).

g. Adolescent kyphosis due to vertebral epiphysitis, Joseph Buchman (by invitation).

h. Dislocation of scaphoid, wrist; marked ulnar deviation of hand; excision of scaphoid, Lewis Clark Wagner (by invitation).

i. 1. Extensive hemangioma of knee joint—operation.

2. Reconstruction anterior crucial ligament of knee joint —3 cases (lantern slides), Arthur Krida.

III. Papers of the Evening.

The non-operative treatment of bursitis, Charlton Wallace.

Significance of the accessory tarsal scaphoid (lantern slides), Isadore Zadek.

IV. Discussion.

SECTION OF OPHTHALMOLOGY

Monday Evening, January 18th, at 8:30 o'clock.

ORDER

I. Reading of the Minutes.

II. Presentation of Cases.

a. Left exophthalmos (receded) followed by right pulsating exopthalmos, John M. Wheeler.

b. 1. Two cases of skull injury with unusual eye complications.

2. Two cases of embolus of central artery with unusual eye complications, Martin Cohen.

c. A case of sympathetic ophthalmia cured by exenteration of the nasal accessory sinuses, Ben Witt Key.

d. Brain tumor with papilledema in the right and complete atrophy of the nerve in the left eye associated with a right homonymous hemianopsia, J. F. Neuberger U. S. N. (by invitation).

e. Flat melano-sarcoma of the choroid with orbital involvement. Exenteration. Photos of sections. X-ray plates, James W. Smith.

III. Paper of the Evening.

Detection of malingerers, Ervin Torok (by invitation).

Discussed by Conrad Berens and J. A. Acheson (by invitation).

IV. General Discussion.

Section of Genito-Urinary Subgery

Wednesday Evening, January 20th, at 8:30 o'clock.

ORDER

I. Reading of the Minutes.
II. Case Reports.
  a. Torsion of the testicle with presentation of patient and specimen, Maurice Meltzer (by invitation).
  b. A case of Schistosoma Haematobium, Archie L. Dean, Jr.
III. Presentation of New Instruments.
  a. Dilatation of the ureter with rubber bags in the treatment of ureteral calculi. Presentation of modified operating cystoscope—a preliminary report, Ralph Dourmashkin.
  b. Minor surgery of the prostate gland. A new cystoscopic instrument employing a cutting current capable of operation in a water medium, Maximilian Stern.
IV. Paper of the Evening.
  The recognition of uric acid stones in the kidney and uric acid showers, Edwin Beer.
V. Discussion—to be opened by Edward L. Keyes and Joseph F. McCarthy.
VI. Executive Session.

Section of Obstetrics and Gynecology

Tuesday Evening, January 26th, at 8:30 o'clock.

ORDER

I. Reading of the Minutes.
II. Case Report.
  Case of anencephalus with adherent amnion causing malposition with premature separation of the placenta (specimen presented), A. Flaischer (by invitation).
III. The results of diathermy in pelvic infections, Th. H. Cherry.

Section of Laryngology and Rhinology

Wednesday Evening, January 27, at 8:30 o'clock.

ORDER

I. Reading of the Minutes.
II. Presentation of Cases.

A case of chronic antritis, necrosis of the superior maxilla, operation, oral fistula, Irving W. Voorhees.

III. Papers of the Evening.

a. A further study and clinical report of the use of acriviolet in the diseases of the upper respiratory tract, Arthur J. Herzig.

Discussion by

John W. Churchman (by invitation).

John E. Mackenty.

Joseph H. Abraham.

b. Intubation of the oesophagus for carcinomatous stricture (lantern slides), Merwin C. Myerson (by invitation).

IV. General Discussion.

V. Executive Session.

Section of Historical and Cultural Medicine

Thursday Evening, January 28th, at 8:30 o'clock.

ORDER

I. Reading of the Minutes.

II. Papers of the Evening.

a. Evolution of the subject of appendicitis, Robert T. Morris.

b. The anatomic art of Leonardo da Vinci (lantern illustrations), Prof. Herbert R. Cross (by invitation), L. Pierce Clark.

III. General Discussion.

Books, pamphlets, and pictures relating to both subjects will be on exhibition, arranged by the Academy Librarian.

STATED MEETINGS

February

Stated Meeting

Thursday Evening, February 4th, at 8:30 o'clock. Program presented in cooperation with the Section of Pediatrics.

ORDER

I. Executive Session.

Election of Trustee.

Final action on proposed changes in the Constitution and By-laws.

II. Papers of the Evening.

a. The significance of the leucocyte count as an index of the rheumatic infection in children, May G. Wilson, M. Kopel (by invitation).

Discussion.

Homer F. Swift.

Theodore B. Barringer, Jr.

b. Certain observations on the course of rheumatic heart disease, John Wyckoff.

Discussion—William C. Munley, Mitchel Field (by invitation).

c. The use of digitalis in the treatment of children with heart disease, Harold E. B. Pardee.

Discussion—William P. St. Lawrence.

III. General Discussion.

Abstracts of the papers presented at this meeting are published in this number.

Stated Meeting

Thursday Evening, February 18th, at 8:30 o'clock. Program presented in cooperation with the Section of Genito-Urinary Surgery.

ORDER

I. Executive Session.

II. Papers of the Evening.

The significance of disturbances of functions of the bladder.

a. The nervous control of the bladder and the mechanism of bladder activity, Horatio B. Williams.

b. Disturbances of urination due to vesical pathology, Alfred T. Osgood.

c. Disturbances of urination due to drugs and to systemic diseases, Harry Gold (by invitation).

d. Disturbances of bladder control in brain and spinal cord disease, Charles A. Elsberg.

e. Bladder disturbances in hysteria and the neuroses, Foster Kennedy.

III. Discussion opened by
Herman O. Mosenthal.
Edward L. Keyes.
Byron Stookey.
Charles A. McKendree.

Abstracts of the papers of Drs. Osgood, Gold and Elsberg are published in this number.

SECTION MEETINGS

February

Section of Dermatology and Syphilis

Tuesday Evening, February 2nd, at 8:15 o'clock.

I. Presentation of Patients.

a. From the University and Bellevue Hospital Clinic.
1. Acne agninata.
2. Mycosis fungoides (tumor stage).
3. Granuloma annulare.
4. Nodular leprosy (two cases).
5. Maculo-anaesthetic leprosy (two cases).
6. Kaposi's sarcoma.
7. Lupus erythematosus of the mouth.
8. Annular macular syphilide.
9. Syphilitic alopecia.
10. For diagnosis (two cases).
11. Tuberculosis cutis
Howard Fox.
Edward R. Maloney.
Paul E. Bechet.

b. From the New York Skin and Cancer Hospital. Miscellaneous cases, Paul E. Bechet.

c. From the City Hospital.
1. Pemphigus (2 cases).
2. Dermatitis herpetiformis.
3. Scrofuloderma.
4. Erythema indurata (2 cases).
5. Erythema nodosum.
6. Salvarsan dermatitis.
A. Benson Cannon.

d. Miscellaneous cases.

II. Discussion.
III. Executive Session.

Section of Surgery

Friday Evening, February 5th, at 8:30 o'clock.

ORDER

I. Reading of the Minutes.
II. Presentation of Cases.
  a. 1. Duodenal ulcer, cholecystitis and pancreatitis.
    2. Intussusception in an adult.
    3. Torsion of the omentum without pathology simulating acute appendicitis.
    4. Extra peritoneal rupture of the bladder.
    5. Myositis ossificans.
    J. William Hinton.
  b. Purpura hemorrhagica;—spleenectomy, Robert E. Brennan.
  c. Cases of primary carcinoma of the lung, showing tumor cells in the sputum, Julius Gottesman.
III. Papers of the Evening.
  a. Spleenectomy for purpura hemorrhagica, Edwin Beer.
  b. Primary carcinoma of the lung, Henry W. Cave.

Section of Neurology and Psychiatry

Tuesday Evening, February 9th, at 8:30 o'clock.

ORDER

I. Case Presentations.
  a. A case of cerebral spongioblastoma showing unusual clinical signs (with lantern slides), Joshua H. Leiner (by invitation), Walter M. Kraus.
  b. A case of chronic internal hydrocephalus with a presentation of pathological material, S. Katz (by invitation).
II. Paper of the Evening.
  The early x-ray diagnosis of brain tumor, Harry A. Goalwin (by invitation).
  Discussion by Charles A. Elsberg, Leon T. Le Wald and Wilder G. Penfield.

Section of Otology

Friday Evening, February 12th, at 8:30 o'clock.

ORDER

I. Reading of the Minutes.
II. Papers of the Evening.

Symposium on Papilledema

a. Papilledema from the viewpoint of the otologist, Edward B. Dench.
b. Papilledema from the viewpoint of the ophthalmologist, Conrad Berens.
c. Papilledema from the viewpoint of the rhinologist, E. Ross Faulkner.
d. Papilledema from the viewpoint of the neurological surgeon, William Sharpe.

III. Discussion—Arthur B. Duel, J. Ramsay Hunt.
IV. Executive Session.

Abstracts of the papers of Drs. Dench, Berens and Sharpe are published in this number.

Section of Ophthalmology

Monday Evening, February 15th, at 8:30 o'clock.

ORDER

I. Reading of the Minutes.
II. Papers of the Evening.

a. Radium therapy in diseases of the eye and adnexa, G. Allen Robinson (by invitation).

Discussion—John M. Wheeler, Lewis W. Crigler.

b. Intranasal treatment of some definite pathological conditions of the eye, J. Montgomery West, Berlin, Germany (by invitation).

Discussion—

John E. Mackenty.
Stuart L. Craig.
Hugh B. Blackwell.
Arnold Knapp.
Colman W. Cutler.

Section of Medicine

Tuesday Evening, February 16th, at 8:30 o'clock.

ORDER

Program presented by the Medical Department of the University of Pennsylvania.

I. Papers of the Evening.

a. Physico-chemical factors in the formation of gall stones, J. E. Sweet, R. C. Weimer (by invitation).

b. Some observations on the pathogenesis of coccidioidal granuloma, F. E. Ahlfeldt (by invitation).

c. Seasonal (pollen) hay fever with negative skin tests; result of treatment, R. A. Kern (by invitation).

d. Aberrant manifestations of clinical heart block, C. C. Wolferth (by invitation).

e. Ephedrin: its use in the treatment of vascular hypotension and bronchial asthma, T. Grier Miller (by invitation).

Section of Orthopedic Surgery

Friday Evening, February 19th, at 8:30 o'clock.

ORDER

I. Reading of the Minutes.

II. Presentation of Cases, Case Reports, and New Instruments. From the Staff of Mt. Sinai Hospital.

a. 1. Subluxation of the patella as a late result of a biceps transplantation.

2. Transposition of the insertion of the achilles tendon and plantar fascia, (Lorenz Operation) to improve lateral balance of foot in paralytic deformities. Three cases, Seth Selig (by invitation).

b. 1. Demonstration of a practical plaster of paris bandage roller.

2. Cases showing the results of implantation of extensor tendons for claw foot, Edgar D. Oppenheimer.

c. Popliteal (Brackett) operation for loose body in knee, Sigmund Epstein.

III. Paper of the Evening.

The place of the orthopedic surgeon in the treatment of the chronic patient, Joel E. Goldthwait, Boston (by invitation).

IV. Discussion.

SECTION OF OBSTETRICS AND GYNECOLOGY

Tuesday Evening, February 23rd, at 8:30 o'clock.

ORDER

I. Reading of the Minutes.

II. Case Reports.

a. Interstitial tubal pregnancy, Salvatore di Palma.

b. Spontaneous rupture of the uterus at onset of labor with unusual complications, Herman Lorber (by invitation).

III. Paper of the Evening.

The sedimentation test,—an aid in obstetrics and gynecology, Herman L. Frosch (by invitation).

An abstract of the paper of the Evening is published in this number.

SECTION OF LARYNGOLOGY AND RHINOLOGY

Wednesday Evening, February 24th, at 8:30 o'clock.

I. Reading of the Minutes.

II. Presentation of Cases.

III. Papers of the Evening.

a. The application of bacterial vaccines locally in the treatment of nasal sinus conditions, Harold Hays.

Discussion by Thos. S. Winslow (by invitation), Arthur Palmer.

b. Lantern slide demonstration of the anatomy of the accessory sinuses of the nose, Simon L. Ruskin (by invitation).

IV. General Discussion.

V. Executive Session.

SECTION OF HISTORICAL AND CULTURAL MEDICINE

Thursday Evening, February 25th, at 8:30 o'clock.

ORDER

I. Reading of the Minutes.

II. Papers of the Evening.

a. Studies of mediaeval anatomy, lantern illustrations, A. Elwyn (by invitation).

b. The development of public interest in public health, lantern illustrations, Donald B. Armstrong.

III. Discusison.

An abstract of Dr. Armstrong's paper is published in this number.

BOOK REVIEW

The Evolution of Anatomy: A Short History of Anatomical and Physiological Discovery to Harvey. By CHARLES SINGER, M.D. XII, 209, pp. 20 pl., 117 illustra. 8° London, Kegan Paul; New York, Knopf, 1925.

The book is the substance of the Fitzpatrick Lectures delivered by Dr. Singer at the Royal College of Physicians (London) during 1923–4. It is dedicated to the memory of the late Professor Arthur Platt, who held the chair of Greek in the University of London during 1894–1925, to whom Singer acknowledges a deep indebtedness for "inestimable help in acquiring such knowledge of ancient medicine as I may possess." With the aid of such an inspiring mentor and with further assistance from Sir George Thane, Professor Elliot Smith and others, our author has produced a work which bids fair to be the best history of anatomy in English for many a long day. He has examined all the basic references first hand, and has been at pains to assemble the most effective and informing illustrations. Perhaps the only source-book which has escaped his attention is the vest-pocket *Historia anatomiae* of Caspar Bauhin (1597), a tiny treasure-trove which gives marginal bibliographic references to all the discoveries made up to the beginning of the 17th century, such as Sprengel gives later in his footnotes. Singer gives, at any rate, for the first time, what we want to know and what we have a right to expect in a book of this kind, viz., definite authenticated statements as to the actual discoverers of the different structures in the human body, with other new information of great value, carried forward in a flowing, easily readable narrative, which orients us, at the same time, as to the meagre advances made in physiology between

the Greeks and Harvey. A fair example of the arresting quality of the author's style is to be found in the opening paragraphs about the immanent anatomical sense or instinct developed in the primitive huntsman, butcher or artist (whether palæolithic or Florentine), and even existing, to some extent, in certain predatory animals. It was only with the Greeks, and later with Leonardo and Vesalius, that anatomy came to be divorced from utilitarian motives (even those of artistic representation), and pursued as an independent science, "for the satisfaction of human curiosity." If the opening chapters (I. II.) are a little dry and didactic, therefore, it is due to the fact that the material (that of classical antiquity) is not, in itself, inspiring, and has been revamped and threshed over by countless hands, to the point of stereotypy. The concluding chapters (III. IV.) deal with the Renaissance, and here Singer rises to the height of his great argument and carries the reader along with him in a spirited *allegro* movement. The tediums of Alexandrian and Galenic anatomy are set off by effective illustrations showing localization of the heart (usually by arrow points) in palæolithic drawings of bison, a wonderful clay model of the human forearms from Cnossus, Crete (1500 B. C.), supplied by Sir Arthur Evans, a Babylonian liver in baked clay, Aristotle's diagram of the mammalian genito-urinary system (restored), an Athenian bas-relief (440 B. C.) giving the human measure of the fathom and the foot (Ashmolean Museum, Oxford), Roman ex voto models of the thoracic and abdominal viscera, and Galen's schemata for the innervation of the larynx and the relation of the blood channels to the three pneumas. A zodiacal figure on a wooden sarcophagus, of Hellenized Egyptian provenance, from the British Museum (1st century A. D.), marks the transition to the stationary anatomy of the Middle Ages. Here Singer is on his own ground, his favorite terrain, and it may be said that he has omitted no single fact or date of consequence and has made accessible to the student a large amount of valuable information concerning the origins of anatomical terms, and other details. He shows clearly the important part played by the great schools of Bologna and Padua in the development of anatomy. His chapter on Vesalius, the center of gravity of the book, gives a clear, detailed and informing account of the *Fabrica,* while the final chapter shows the

steps taken by Harvey in his great discovery. Singer is fair to Sylvius and Columbus, he gives handsome photographs of the recently exhumed Canano copper plates, obtained from Sudhoff, and his section on Belon, Coiter, Ruini and the other comparative anatomists of the 16th century is a new thing and of positive value. One cannot agree with our author, it is true, when he asserts that Paré was a shameful plagiarist (Paré's acknowledgment to Vesalius is handsome and honorable) or that the crabbed Latin of the *Fabrica* is the spoken Latin of the period, but these are mere passing slips. The book closes with an unique "Vesalian Atlas," comprising 18 of the most important nudes, skeletons and muscle-men in the *Epitome* and the *Fabrica.*

F. H. Garrison.

LIBRARY NOTES

Presentation of Dr. Brill's Library

Mrs. Brill has generously presented the library of her late husband, Dr. Nathan E. Brill, to the Academy of Medicine. We have thus come into the possession of a number of important books, some of which we did not have before and others which have been put on the shelves to take the place of those worn out. A few of the volumes received are given in the list below:

Allbutt's System of Medicine, 9 volumes.

Centralblatt f. Innere Medizin, 12 volumes.

Deutsches Archiv f. Klinische Medizin, Volumes 47–108.

Haller, Albertus. Physiology; being a course of lectures, 2 volumes, 1772.

Hutchison, Robert & Rainy, Harry. Clinical methods . . . 1902.

Journal of the American Medical Association, 12 volumes.

Moore, John. A journal during a residence in France . . . 2 volumes, 1793.

Nothnagel—Special Pathologie, 4 volumes.

Sylvius [de la Boe] Franciscus. Opera medica . . . 2 volumes, 1695.

RECENT ACCESSIONS TO THE LIBRARY

Arny, H. V. Principles of pharmacy. 3. ed.
Phila. Saunders, 1926, 1078 p.

Ash, E. L. Facts about stammering.
Lond. Mills, 1925. 64 p.

Aub, J. C.; Fairhall, L. T.; Minot, A. S. & Reznikoff, P. Lead poisoning.
Balt. Williams, 1926, 265 p.

Barcroft, J. The respiratory function of the blood. 2. ed.
Cambridge. Univ. pr., 1925, v. 1.

Barnard, J. E., & Welch, F. V. Practical photo-micrography.
Lond. Arnold, 1925, 316 p.

Barrett, (Sir) W. F. The religion of health.
Lond. Dent, 1925, 149 p.

Basu, B. D. Diabetes mellitus and its dietetic treatment.
Bahaduroanj. The Panini off., 1925, 94 p.

Beauvy, A. Sérums et vaccins.
Paris, Maloine, 1925, 117 p.

Bergey, D. H. Manual of derminative bacteriology.
Balt. Williams, 1925, 462 p.

Berkeley, W. N. The principles and practice of endocrine medicine.
Phila. Lea, 1926, 368 p.

Borden, R. C., & Busse, A. C. Speech correction.
N. Y. Crofts, 1925.

Bose, Y. M. Internal secretion in health and disease.
Lond. Butterworth, 1925, 550 p.

Brillat-Savarin, J. A. The physiology of taste.
Lond. Davies, 1925, 326 p.

Brown, L., & Sampson, H. L. Intestinal tuberculosis.
Phila. Lea, 1926, 304 p.

Brown, W., & Thomson, G. H. The essentials of mental measurement. 3. ed.
Cambridge. Univ. pr., 1925, 224 p.

Burt, C. The young delinquent.
N. Y. Appleton, 1925, 619 p.

Calkins, G. N. The biology of the protozoa.
Phila. Lea, 1926, 623 p.

Castiglioni, A. Il volto di Ippocrate.

Milano. Soc. Ed. Unitas, 1925, 389 p.

Catheart, E. P.; Paton, D. N., & Pembrey, M. S. Practical physiology. 2. ed.
Lond. Arnold, 1925, 412 p.

Crauford, L. The idle hours of a victorious invalid.
London. Chapman, 1925, 245 p.

Delano, J. A. American Red Cross text-book on home hygiene. 3. ed.
Phil. Blakiston, [1925], 347 p.

Devereux, J. R. Eating to banish disease.
Lond. Deniel, 1925.

Driesch, H. Grundprobleme der Psychologie.
Leip. Reinicke, 1926, 249 p.

DuPuy, W. A. Our insect friends and foes.
Phil. Winston, [1925], 275 p.

Dutton, W. F. Intravenous therapy. 2. ed.
Phila. Davis, 1925, 594 p.

Elwyn, H. Nephritis.
N. Y. Millan, 1926, 347 p.

Evers, N. The chemistry of drugs.
Lond. Benn, 1926, 247 p.

Fisher, A. G. T. Manipulation surgery.
Lond. Lewis, 1925, 168 p.

Floyd, R. Kidney disease.
N. Y. Dougherty, 1926.

Fothergill, W. E. A handbook for midwives and maternity nurses. 5. ed.
Edinb. 1925, 278 p.

Frumusan, J. Beauty: how to regain and retain. Aesthetic treatment for race regeneration.
Lond. Bale, 1925, 124 p.

Gans, O. Histologie der Hautkrankeiten. v. 1.
Berlin. Springer, 1925.

Girdlestone, G. R. The diagnosis and treatment of tuberculosis of the hip.
Lond. Milford, 1925, 94 p.

Goodhart, Sir J. F. The diseases of children. 12. ed.
Lond. Churchill, 1925, 966 p.

Grover, B. B. High frequency practice.

Kansas City. Election pr., 1925, 555 p.

Hamer, (Sir) W. H., & Hutt, C. W. A manual of hygiene.
London. Methuen, [1925], 821 p.

Hart, I. B. An introduction to physical science.
Oxford. Clarendon pr., 1925, 306 p.

Henson, H. H. Notes on spiritual healing.
Lond. Williams, 1925, 197 p.

Hill, S. C. A cook book for nurses.
Bost. Barrows, 1925, 76 p.

Holland, A. L. Indigestion: what it is and how to prevent it.
N. Y. Appleton, 1926, 129 p.

Horsley, J. S. Surgery of the stomaeh and small intestine.
N. Y. Appleton, 1926, 325 p.

Hunt, H. E. How to train the memory.
London. Foulsham, [1925], 93 p.

Iltis, H. Gregor Johann Mendel.
Berlin, Springer, 1924, 426 p.

Kettle, E. H. The pathology of tumours. 2. ed.
Lond. Lewis, 1925, 285 p.

de Kruif, P. Microbe hunters.
N. Y. Harcourt, 1926, 363 p.

Lyon, G., & Loiseau, P. Formulaire thérapeutique. 13. éd.
Paris. Masson, 1925.

McCollum, E. V., & Simmonds, N. Food, nutrition and health.
Baltimore. Authors, [1925], 143 p.

Meakins, J. C., & Davies, H. W. Respiratory function in disease.
Edinburgh. Oliver, 1925, 478 p.

Michaelis, L. Practical physical and colloid chemistry.
Cambridge. Heffer, 1925, 195 p.

Morgan, C. L. Life, mind and spirit.
Lond. Williams, 1926, 316 p.

Morton, G. F. Childhood's fears.
N. Y. Macmillan, 1925, 284 p.

Murrell, W. What to do in cases of poisoning. 13. ed.
Lond. Lewis, 1925, 276 p.

Myers, C. S., & Bartlett, F. C. A text-book of experimental psychology. 3. ed. Pt. 1 & 2.
Cambridge. Univ pr., 1925.

Neustätter, O. Max Pettenkofer.
Wien. Springer, 1925, 93 p.

Paul, F. T. Selected papers, surgical and pathological.
Lond. Haillière, 1925, 284 p.

Peck, A. W. [et al.]. Ears and the man. Studies in social work for the deafened.
Phila. Davis, 1926, 217 p.

Pieraccini, G. La stirpe de Medici di Cafaggiolo.
Firenze. Vallecchi, 1925, 3 vols.

Richardson, R. A. Increasing the strength of the eyes.
Kansas City. Eyesight & health asso., 1925, 188 p.

Richter, C. Human vibration.
Harrisburg, Pa. Handy bk. corp., 1925, 216 p.

Roederer, C., & Ledent, R. La pratique des déviations vertébrales.
Paris. Doin, 1926.

Rosenthal, O. Wunderheilungen und ärztliche Schutzpatrone in der bildenen Kunst.
Leip. Vogel, 1925, 42 p. 102 pl.

Ross, J. M. Post-mortem appearances.
Lond. Milford, 1925, 216 p.

Russell, E. H. & Russell, W. K. Ultra-violet radiation.
Edinb. Livingstone, 1925, 262 p.

Saudek, R. The psychology of handwriting.
Lond. Allen, 1925, 288 p.

Seres, M. Operatoria urologica.
Barcelona. Aragones, 1925, 766 p.

Sharp, C. G. K. Schistosomiasis vel bilharziasis.
Lond. Bale, 1925, 74 p.

Shearcroft, W. F. F. Matter, man and mind.
Lond. E. Benn, 1925, 191 p.

Sherrill, J. G. Peritonitis.
N. Y. Appleton, 1925, 397 p.

Shirokogoroff, S. M. Process of physical growth among the Chinese. v. 1.
Shanghai, Commercial pr. 1925.

Solomons, B. A handbook of gynaecology. 2. ed.
Lond. Baillière, 1925, 303 p.

Stammers, G. E. F. The fight against infection.
Lond. Faber, 1925, 214 p.

Sweeney, J. S. The natural increase of mankind.
Balt. Williams, 1926, 185 p.

Thom, C. & Fisk, W. W. The book of cheese. Rev. ed.
N. Y. Macmillan, 1925, 415 p.
Thomas, J. The clinical study and treatment of sick children. 4. ed.
Edinb. Oliver, 1925, 912 p.
Transactions of the Edinburgh obstetrical society, 1924–25.
Transactions of the Medical society of the State of North Carolina, 1925.
Wallis, T. E. Practical pharmacognosy.
Lond. Churchill, 1925, 115 p.
Ward, E. Favorite prescriptions.
Lond. Churchill, 1926, 96 p.
Watson, J. K. A handbook for senior nurses and midwives.
Lond. Oxford pr. 1926, 554 p.
Wolff, E. Anatomy for artists.
Lond. Lewis, 1925, 174 p.
Worcester, A. American red cross service in Switzerland 1918–19.
Boston. Four seas co. [1925], 90 p.
Znaniecki, F. The laws of social psychology.
Chic. Univ. of Chic. pr. 1925, 320 p.
Zoethout, W. D. A textbook of physiology. 2. ed.
Lond. Kimpton. 1926, 616 p.

A MEDIAEVAL KNOWLEDGE-BOOK

We have just procured from Germany a fine copy of another incunabulum to add to the collection of the Academy—"De Proprietatibus Rerum" by Bartholomaeus Anglicus, printed at Nuremberg by Koberger in 1483. It is beautifully printed in double columns upon paper which is as firm and clean as the day it was made. The text is in Latin and in the first initial letter of this copy, delicately illuminated by hand, a heron is depicted. The volume is bound in vellum and is unfortunately partly loosened at the back.

Bartholomew the Englishman (wrongly called B. DeGlanville by some) flourished between 1230 and 1250, but his exact dates are unknown to us, neither is the place of his birth or death revealed. He was a Minorite and was sent to Saxony to be a

teecacher of holy theology to the Franciscan brethren there. He was also a professor of theology in the University of Paris.

This book "on the properties of things" constitutes an encyclopedia of knowledge of the middle ages and in manuscript it was one of the most popular books of the XIII and XIV centuries. It was probably written, as shown by internal evidences, about 1248. At present the earliest known MS., dated 1296, is in the Ashmole Collection in Oxford. The work was translated into French, Spanish, Dutch and English. It was first printed in 1472 (?) at Cologne and there were fourteen or more editions before 1500. The work consists of nineteen books, of which numbers 5, 6 and 7 are anatomical and medical. Bartholomew's sources of knowledge are Aristotle, Pliny, Isidore of Seville, Constantinus Africanus and many others whose names he appends in a list.

The following passage is given in English dress from the edition of Berthelet, 1535:

"Then consider thou shortly hereof, that a physician visiteth oft the houses and countries of sick men. And seeketh and searcheth the causes and circumstances of the sicknesses, and arrayeth and bringeth with him divers and contrary medicines. And he refuseth not to grope and handle, and to wipe and cleanse wounds of sick men. And he behooleth to all men hope and trust of recovering of health; and saith that he will softly burn that which shall be burnt, and cut that which shall be cut. And lest the whole part shall corrupt, he spareth not to burn and to cut off the part that is rotted, and if a part in the right side acheth, he spareth not to smite in the left side. A good leech leaveth not cutting or burning for weeping of the patient. And he hideth and covereth the bitterness of the medicine with some manner of sweetness. He drinketh and tasteth of the medicine, though it be bitter: that it be not against the sick man's heart, and refraineth the sick man of meat and drink; and letteth him have his own will, of the whose health is neither hope nor trust of recovering."

The seats of the various emotions and faculties are thus simply given:

"Some men ween, that the milt is cause of laughing. For by the spleen we are moved to laugh, by the gall we are wroth, by the heart we are wise, by the brain we feel, by the liver we love."

Robert Steele writes: "Our author affords perhaps the simplest way of learning what Chaucer and perhaps Shakespeare knew and believed of their surroundings—earth, air, and sea."

A. M.

CANDIDATES RECOMMENDED TO FELLOWSHIP MARCH 3

Alvan LeRoy Barach, M.D.	19 East 64th Street
James Creighton Barker, M.D.	66 Trumbull Street, New Haven, Conn.
Milton Lionel Berliner, M.D.	35 West 52d Street
Sidney Cohen, M.D.	1955 Grand Concourse
James Francis Coughlan, M.D.	176 West 81st Street
Claude Granville Crane, M.D.	353 Washington Avenue, Bklyn.
Leonard Tomb Davidson, M.D.	667 Madison Avenue
Amedeé Joseph Debon, M.D.	850 Park Avenue
Joseph Ivimey Dowling, M.D.	116 Washington Avenue, Albany
Charles Daniel Easton, M.D.	63 East 64th Street
Solomon Fineman, M.D.	64 East 91st Street
Walter Guernsey Frey, Jr., M.D.	121 East 60th Street
Marius Greene, M.D.	47 Gramercy Park
William Vincent Healey, M.D.	48 West 82d Street
Harold Eliphalet Hoyt, M.D.	345 Edgecombe Avenue
Victor Jacques Jacobsohn, M.D.	701 West 175th Street
Robert Hayward Kennedy, M.D.	29 East 64th Street
Daniel Bartholomew Kirby, M.D.	30 West 59th Street
Isaac David Kruskal, M.D.	863 Prospect Place, Bklyn.
Alexander LaVigne, M.D.	471 Park Avenue
Richard John Lawton, M.D.	Terryville, Connecticut
Ray Robinson Losey, M.D.	9 East 46th Street
Arnold Messing, M.D.	944 Park Avenue
Grant Palmer Pennoyer, M.D.	114 East 54th Street
Mary Putman, M.D.	124 East 55th Street
Nicholas Sigmund Ransohoff, M.D.	116 East 58th Street
Edmund Jean Rhodebeck, M.D.	8 East 54th Street
John Elden Sawhill, M.D.	788 Riverside Drive

Herman Shann, M.D.	1453 Union Street, Bklyn.
Louis Lawrence Shapiro, M.D.	515 West 110th Street
Aaron Hood Thomasson, M.D.	8 East 54th Street
Joseph Francis Ward, M.D.	411—9th Street, Bklyn.
George Lewis Wurtzel, M.D.	1040 Park Avenue

DEATHS OF FELLOWS OF THE ACADEMY

John Winthrop Wright, A.B., M.D., 810 Myrtle Avenue, Bridgeport, Conn.; born in Cromwell, Conn., June 8, 1852; graduated in medicine from New York University in 1880; elected a Fellow of the Academy February 6, 1902; died February 10, 1926.

Thomas John Hillis, 35 Charlton Street, New York City, born in 1852; graduated in medicine from the College of Physicians and Surgeons, New York City, in 1882; elected a Fellow of the Academy November 3, 1887; died February 21, 1926.

DONATIONS TO THE LIBRARY FUNDS

Donations and bequests are solicited by The New York Academy of Medicine for the maintenance and expansion of the Library.

A donation or bequest of $5,000 or more will provide for a special library fund, the income of which may be used for the general purposes of the Library or restricted to the purchase of books and periodicals, as the donor or testator may indicate. When so restricted, a special bookplate will be used. A donation or bequest of less than $5,000 but more than $1,000 will provide for a named library fund, the income of which will be used for general library purposes or restricted for the purchase of books and periodicals, as desired by the donor or testator.

Donations of less than $1,000 will be added to the general library funds.

FORM OF BEQUESTS

The following is a brief legal form as a suggestion under which bequests may be made in behalf of the Academy:

I give, devise and bequeath unto "The New York Academy of Medicine" of the City of New York, State of New York, a corporation duly incorporated by the Legislature of the State of New York by an act, entitled "An act to incorporate The New York Academy of Medicine," passed June 23, 1851, and amended June 4, 1853, June 2, 1877, and April 24, 1925.....

DATES OF MEETINGS

Stated Meetings of the Academy, 1st and 3rd Thursdays.
Trustees, 2nd Wednesday.
Council, 4th Wednesday.
Committee on Library, 2nd Tuesday.
Committee on Admission, 1st Wednesday.
Public Health Committee, Mondays.
Committee on Medical Education, 2nd Thursday.
Building Committee, 1st and 3rd Tuesdays.
Publication Committee, date varies.
Program Committee, date varies.

DATES OF SECTION MEETINGS

Dermatology and Syphilis, 1st Tuesday.
Surgery, 1st Friday.
Neurology and Psychiatry, 2nd Tuesday.
Pediatrics, 2nd Thursday.
Otology, 2nd Friday.
Ophthalmology, 3rd Monday.
Medicine, 3rd Tuesday.
Genito Urinary Surgery, 3rd Wednesday.
Orthopedic Surgery, 3rd Friday.
Obstetrics and Gynecology, 4th Tuesday.
Laryngology and Rhinology, 4th Wednesday.
Historical and Cultural Medicine, date varies.

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FREDERICK T. VAN BUREN, JR. — ARTHUR M. WRIGHT
SAMUEL A. BRADBURY

Committee on Library

FRANK J. BLODGETT, *Chairman* — J. RAMSAY HUNT
CHARLES A. ELSBERG — RUSSELL L. CECIL
ERNEST G. STILLMAN

Public Health Committee

CHARLES L. DANA, *Chairman*

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NELLIS B. FOSTER — ARNOLD KNAPP — FREDERICK P. REYNOLDS, *Medical Secretary*

GRACE CARSTENSEN, *Executive Secretary*

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ARTHUR M. WRIGHT

Nominating Committee

LEWIS F. FRISSELL, *Chairman*
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Committee on Revision of the By-Laws

HERBERT S. CARTER, *Chairman* — ROYAL S. HAYNES
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CLYDE E. MCDANNALD
THOMAS H. CURTIN

Historical and Cultural Medicine
L. PIERCE CLARK
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